

### ABSTRACT OF THE DISCLOSURE

A semiconductor package with a photosensitive chip and a fabrication method thereof are provided. A substrate having a core is prepared. A solder mask layer is applied over a surface of the core and formed with an opening to expose a continuous peripheral portion on the surface of the core. At least one photosensitive chip is mounted on and electrically connected to the substrate. An encapsulation dam is formed on the continuous peripheral portion of the core and surrounds the chip. The dam includes a shoulder portion adjacent to and flush with the solder mask layer, and a protruded support portion surrounding the shoulder portion. A lid is attached to the support portion of the dam for sealing the dam such that the chip is received in a space defined by the substrate, the dam and the lid.

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